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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,186	03/02/2004	Kerry James Stinson	14631	3202

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EXAMINER	
KUNDU, SUJOY K	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/790,186	STINSON ET AL.	
	Examiner	Art Unit	
	Sujoy K. Kundu	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-250* is/are pending in the application.

4a) Of the above claim(s) *101-105 and 161-250* is/are withdrawn from consideration.

5)☒ Claim(s) *106-160* is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/05; 06/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 1-105 and 161-250 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on December 2, 2005.

Applicant's election with traverse is acknowledged. The traversal is on the ground(s) that the figures do not provide a one to one correspondence with separate species. This is not found persuasive for the following reasons:

With regards to Figure 4 and Figure 5 differ because Figure 5 has the step of producing a semblance panel associated with the selected CMP location in response to the range of velocity values and the selected CMP gathers associated with CMP locations located within the CMP window.

With regards to Figure 4 and Figure 13 differ because Figure 13 produces sets of common offset migration image gathers in response to the input 2D array of seismic data and the temporary initial velocity field.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 106-160 drawn to an invention nonelected with traverse in a response sent on December 2, 2005. A complete reply to this office action

must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Allowable Subject Matter

Claims 106-160 allowed.

Pertinent Art Cited

Pham (5,978,314) teaches a method for producing an initial velocity field estimate for control plane from seismic data associated with said control plane and comprising time-amplitude representations associated with source-receiver locations spaced apart by an offset distance and having a midpoint there between, the seismic data being arranged into common midpoint (CMP) gathers associated with respective CMP locations and the control plane having an edge intersecting a plurality of the CMP locations, the method comprising: a producing starting velocity field estimate from an initial range of velocity values and an initial range of velocity values and an initial range of time values; producing a migrated starting velocity from said starting velocity field estimate and said seismic data; producing pre-stack imaged gathers by performing a 2-dimensional pre-stack imaging process on said seismic data; and producing normal moveout gathers in response to said migrated starting velocity field, including performing a normal moveout operation on said pre-stack imaged gathers.

Krebs et al. (6,493,634) teaches a method for producing an initial velocity field estimate for control plane from seismic data associated with said control plane and

comprising time-amplitude representations associated with source-receiver locations spaced apart by an offset distance and having a midpoint there between, the seismic data being arranged into common midpoint (CMP) gathers associated with respective CMP locations and the control plane having an edge intersecting a plurality of the CMP locations, the method comprising: a producing starting velocity field estimate from an initial range of velocity values and an initial range of velocity values and an initial range of time values; producing a migrated starting velocity from said starting velocity field estimate and said seismic data; producing pre-stack imaged gathers by performing a 2-dimensional pre-stack imaging process on said seismic data; and producing normal moveout gathers in response to said migrated starting velocity field, including performing a normal moveout operation on said pre-stack imaged gathers.

De Bazelaire et al. (5,663,928) teaches teaches a method for producing an initial velocity field estimate for control plane from seismic data associated with said control plane and comprising time-amplitude representations associated with source-receiver locations spaced apart by an offset distance and having a midpoint there between, the seismic data being arranged into common midpoint (CMP) gathers associated with respective CMP locations and the control plane having an edge intersecting a plurality of the CMP locations, the method comprising: a producing starting velocity field estimate from an initial range of velocity values and an initial range of velocity values and an initial range of time values; producing a migrated starting velocity from said starting velocity field estimate and said seismic data; producing pre-stack imaged

gathers by performing a 2-dimensional pre-stack imaging process on said seismic data; and producing normal moveout gathers in response to said migrated starting velocity field, including performing a normal moveout operation on said pre-stack imaged gathers.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Although Pham, Krebs, and De Bazelaire disclose a method for producing an initial velocity field estimate for control plane from seismic data associated with said control plane and comprising time-amplitude representations associated with source-receiver locations spaced apart by an offset distance and having a midpoint there between, the seismic data being arranged into common midpoint (CMP) gathers associated with respective CMP locations and the control plane having an edge intersecting a plurality of the CMP locations, the method comprising: a producing starting velocity field estimate from an initial range of velocity values and an initial range of velocity values and an initial range of time values; producing a migrated starting velocity from said starting velocity field estimate and said seismic data; producing pre-stack imaged gathers by performing a 2-dimensional pre-stack imaging process on said seismic data; and producing normal moveout gathers in response to said migrated starting velocity field, including performing a normal moveout operation on said pre-stack imaged gathers. All three fail to teach adjusting said migrated starting velocity field in response to said normal moveout gathers and said migrated starting velocity filed to produce a plurality of time-

velocity values for each of the CMP locations, said plurality of said time-velocity values acting as said initial velocity.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sujoy K. Kundu whose telephone number is 571-272-8586. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKK
02/13/2006

John Barlow
Supervisory Patent Examiner
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